

REMARKS

Claims 2 and 4-9 remain in the application. Applicants acknowledge with appreciation the indication of allowable subject matter in claims 4-9, but respectfully request reconsideration of the application and allowance of all claims in view of the above amendments and the following remarks.

The examiner has rejected claim 2 as unpatentable over Fukasawa (USP 5,715,521) in view of Molev-Shteiman (USP 6,301,288). This rejection is respectfully traversed.

The present invention is directed to a multi-point-to-point network, and particularly to an improved technique for managing communications and synchronization signals in such a network. According to the invention, communications and synchronization signals are sent simultaneously, with the synchronization signals superimposed on the communications signals. The synchronization signals are sent at a lower power and/or coded with a code that is different from the code used on the communications signals, to thereby minimize interference with the communications signals. In the aspect of the invention to which claim 2 is directed, the synchronization signals are first modulated using alternating multiplication by +1 and -1. The purpose of the +1, -1 modulation is to ensure that the synchronization signal does not have any DC offset.

Fukasawa is directed to a method of controlling synchronization signal power, wherein the synchronization signal is first sent until synchronization is acquired, and then the power of the synchronization signal is reduced while it continues to be transmitted. As pointed out by the examiner, Fukasawa does not teach +1, -1 modulation of the synchronization signal, and the examiner cites Molev-Shteiman for this teaching.

Molev-Shteiman discloses chip interleaving in a DSSS communications system. In the arrangement of Fig. 4, a pseudorandom code sequence is generated at 42, multiplied with the data bits to be transmitted in multiplier 44, and the multiplication result is then modulated onto the carrier in modulator 46. Lines 26-64 of column 6 describe the use of acquisition codes sequences and synchronization frames, the purpose of which is to obtain and maintain synchronization between the transmitter and receiver. Fig. 7 illustrates an arrangement for the situation in which all of the synchronization frames are identical, and are generated by the code sequence generator 80. Via the switch 82, the chip frames from multiplier 44 or the synchronization frames from the sequence generator 80 are passed to the modulator 46 for modulation onto the carrier.

The examiner has cited various excerpts from the Molev-Shteiman specification mentioning multiplication by +1 and -1. All of these are referring to the operation performed in multiplier 44 (or the multiplier 50 in Fig. 5 used for demodulation).

The +1, -1 modulation discussed in Molev-Shteiman is quite different from that of the present invention, and if the teachings of Molev-Shteiman were adopted in Fukusawa the invention of claim 9 would not result. More particularly, Fukusawa already teaches a spreading modulator 7 which, as described at lines 56-59 of column 2, performs a function generally similar to the multiplier 44 in Molev-Shteiman. Sync signal generator 10 in Fukusawa serves a function generally similar to code sequence generator 80 in Molev-Shteiman. The difference is that in Molev-Shteiman the communications signals and sync signals can only be alternately sent through switch 82, whereas in Fukusawa the two are combined in an adder 12 and are sent simultaneously. But in neither case is there any modulation of the sync signals by alternating

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+1's and -1's. The +1, -1 multiplication discussed by Molev-Shteiman is simply an explanation of what occurs when the code sequence from generator 42 is used to encode the communications data in multiplier 44, and the modulator 46 does not modulate the sync sequence by alternating +1, -1 but instead modulates the synch signal onto a carrier for transmission.

The present invention modulates the sync signal by alternating +1, -1 in order to ensure that the sync signal does not have any DC offset. There is nothing like this done in Molev-Shteiman, and the combination of the teachings of Molev-Shteiman with Fukusawa could not result in what is defined in claim 9.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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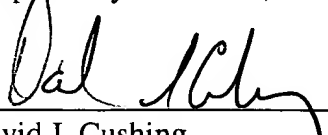
SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON DC OFFICE

23373

CUSTOMER NUMBER

Respectfully submitted,



David J. Cushing
Registration No. 28703

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